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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/068,031	02/06/2002	Hidetaka Ozawa	OAC-018	7237

959 7590 08/19/2003

LAHIVE & COCKFIELD
28 STATE STREET
BOSTON, MA 02109

EXAMINER

RIDDLE, KYLE M

ART UNIT	PAPER NUMBER
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3748

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DATE MAILED: 08/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/068,031

Applicant(s)

OZAWA ET AL.

Examiner

Kyle M. Riddle

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: Page 4, line 2, "abrake" should read --a brake--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-3, 5-10, 12-17, 19-20 are rejected under 35 U.S.C. 102(e) as being unpatentable by Czimmek et al. (U.S. Patent 6,476,599).

Czimmek et al. disclose an electronically controlled solenoid device comprising:

- an electromagnetic actuator 10 with armature 24 maintained in a position of rest generally between two electromagnets 12, 18 by opposing working return springs 30, 32 (column 3, lines 56-65);
- controlling the voltage and magnetic flux via comparator 38 to control the landing velocity of the armature 24 over a certain time period (column 5, lines 9-40);
- determining the armature position and adjusting the current based on a nominal position (column 6, lines 1-25);

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- operating a cylinder valve of an internal combustion engine (column 1, lines 15-20).

4. Claims 1-4, 6-11, 13-18, and 20 are rejected under 35 U.S.C. 102(e) as being unpatentable by Yanai et al. (U.S. Patent 6,276,318).

Yanai et al. disclose a solenoid valve actuating apparatus comprising:

- an engine valve 16 for an internal combustion engine with an armature 44 urged toward a neutral position by upper spring 38 and lower spring 34 (column 13, lines 1-12);

- applying current for a first period of time to the upper coil 48 and a reversing direction to the lower coil 54 to brake the armature at one end of travel (column 13, lines 54-67 with column 14, lines 1-15);

- switching the current from an upper coil 48 to a lower coil 54 at different time periods and using flywheel current states to provide reversing or braking force for valve actuation (column 19, lines 14-44, column 22, lines 46-67 with column 23, lines 1-32, and Figures 2, 8, 21, and 22).

5. Claims 1-3, 6-10, 13-17, and 20 are further rejected under 35 U.S.C. 102(b) as being unpatentable by Wright et al. (U.S. Patent 5,991,143).

Wright et al. disclose a method for controlling velocity of an armature of an electromagnetic actuator comprising:

- an electromagnetic actuator 10 for operating a cylinder valve 28 of an internal combustion engine with armature 24 maintained in a position of rest generally between two electromagnets 12, 18 by opposing working return springs 30, 32 (column 3, lines 20-30);

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- controlling the voltage and magnetic flux via comparator 38 to control the landing velocity of the armature 24 over a certain time period (column 5, lines 31-67 with column 6, lines 1-5).

Conclusion

6. The IDS (PTO-1449) filed on 6 February 2002 has been considered. An initialized copy is attached hereto.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of 5 patents.

- Matsumoto et al. (U.S. Patent 5,671,705) disclose a control system for two opposed solenoid-type electromagnetic valve using predetermined time periods of energization.

- Schmitz et al. (U.S. Patent 5,868,108) disclose a method for controlling an electromagnetic actuator with equalizing springs and armature braking.

- Ishii (U.S. Patent 5,964,192) discloses an electromagnetically operated valve control system using sensor signals for current control.

- Wright et al. (U.S. Patent 6,176,207) disclose electronically controlling the landing of an armature in an electromagnetic actuator with dual springs and flux control.

- Kolmanovsky et al. (U.S. Patent 6,397,797) disclose a method of controlling valve landing with at least one discrete position measurement sensor.

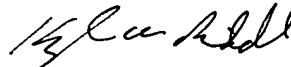
Communication

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kyle M. Riddle whose telephone number is (703) 306-3409. The examiner can normally be reached on M-F (07:30-5:00) Second Friday Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (703) 308-2623. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.



Kyle M. Riddle
Examiner
Art Unit 3748

kmr



THOMAS DENION
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700